

## A New Subspecies of *Lycaena editha* (Mead) (Lycaenidae) from Nevada

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**Abstract.** A distinct *Lycaena editha* (Mead) is described from Nevada. It is characterized by its pale aspect and faint maculation. This adds one more to the list of pallid phenotypes from the Great Basin.

The copper *Lycaena editha* (Mead) is locally common in the north-western quarter of the United States and adjacent southern Canada. Two subspecies have been described, the nominate from the western portion of the species' range and *montana* Field from the eastern part. A recently assembled series from the north-central Great Basin of Nevada indicates the existence of a distinct and previously unrecognized phenotype, described herein as:

***Lycaena editha nevadensis* Austin n. ssp.**

Fig. 1, 2

**Male** (based on holotype and 22 paratypes) **Dorsal Surface.** Ground color Army Brown (capitalized colors after Smithe, 1975, 1981). Primaries with relatively distinct black cell-end bar and less distinct, sometimes absent, subbasal macule. A few specimens with faint basal macule. Secondaries with indistinct, black cell-end bar. Cells Cu1-Cu2 and Cu2-2A and, often, cells anterior to M1-M2 with marginal black macules indistinctly capped or encircled with Flesh Ochre. **Ventral Surface.** Ground color from nearly white to Pale Pinkish Buff. Primaries with prominent, black cell-end bar, black subbasal macule and, usually, small basal macule. Variable (sometimes absent posteriorly) postmedian series of small black macules, a mid-cell macule (sometimes absent in Cu2-2A) and submarginal series of brownish macules. Marginal area brownish. Secondary macules brownish, occasionally not much darker than ground color. Macules variably edged with black and indistinctly encircled with white. Marginal macules indistinct except in Cu1-Cu2 where a distinct black macule encircled with pale brownish orange and capped with black. Those in other cells similar but less distinct, appearing blurred. Entire marginal series indistinctly bordered submarginally with white crescents.

**Female** (based on allotype and 21 paratypes) **Dorsal Surface.** Ground color as in male to slightly darker Hair Brown. Primaries with prominent cell-end bar, subbasal and, occasionally, indistinct basal cell macules. Cu2-2A usually with dark subbasal macule. Postmedian macules variable from distinct and complete to indistinct and incomplete. Macules in M1-M2 and M2-M3 invariably present. All specimens with, at least, indistinct trace (often prominent and extensive) of orange

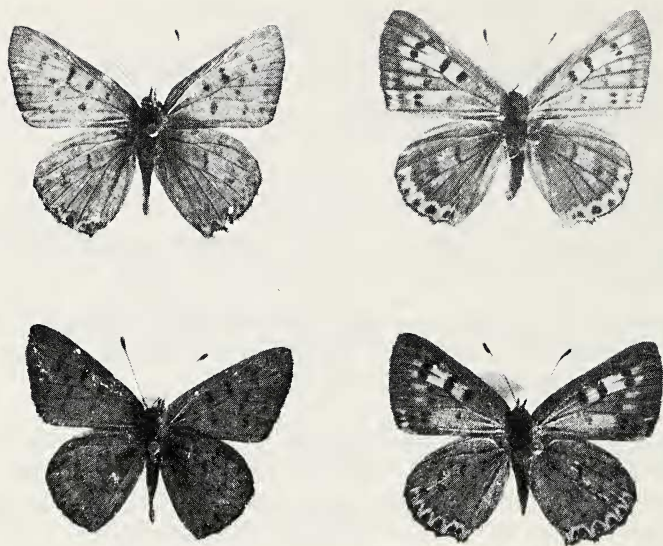


Fig. 1. *Lycaena editha* subspecies. Top, left: *nevadensis* holotype male - NEV: Elko Co., Jarbidge Mts., Jarbidge Cany., Pine Creek to Gorge Gulch, 30 July 1981, leg. G. T. Austin; right: *nevadensis* allotype female - same data as holotype male. Bottom, left: *editha* male - NEV: Douglas Co., Heavenly Valley Ski Area, 6 July 1981, leg. G. T. Austin; right: *editha* female - NEV: Douglas Co., Carson Valley, Scossa Ranch, 3 July 1982, leg. G. T. Austin.

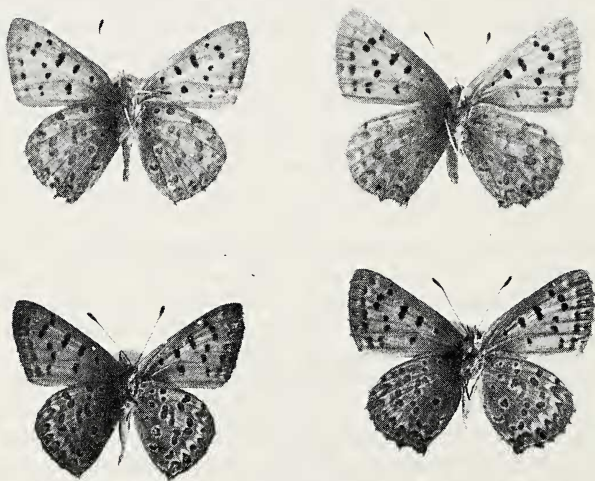


Fig. 2. Same specimens as in Fig. 1.

(color variable including Salmon Color, Warm Buff, Spectrum Orange, Chrome Orange) patches basally in M1-M2 and M2-M3, occasionally involving all cells anterior to vein 2A. Usually relatively distinct irregular marginal orange line (of the same color as orange patches or of brighter orange) from posterior border anteriorly to usually Cu2 (sometimes Cu1). Secondaries with indistinct cell-end bar and indistinct bar or macules in M1-M2 and M2-M3. Occasional specimens slightly paler in M1-M2 and M2-M3. Cells M1-M2 through Cu2-2A with marginal black macules (often double in Cu2-2A) encircled with Chrome Orange (occasionally paler). **Ventral Surface.** Ground color of primaries varied from nearly white to Pale Pinkish Buff to pale Salmon Color. Maculation similar to male but more often complete and distinct. Submarginal macules in Cu1-Cu2 and Cu2-2A often with orange flush distally. Secondaries varied in ground color from nearly white to Pale Pinkish Buff to Drab. Maculation as in male but often less distinct, especially basally. Marginal series more distinct and defined.

**Size** (length in mm of primary along costa from wing base to greatest extent). Holotype = 16.0, allotype = 15.7, all ♂ types = 15.9 (15.1-18.4, N=21), all ♀ types = 15.5 (14.3-16.5, N=21).

**Type Locality.** NEVADA: Elko County; Jarbidge Mountains, Jarbidge Canyon between Pine Creek and Gorge Gulch, 6600', T46N, R9E, S33 on USGS Jarbidge, Nev.-Idaho quadrangle, 15 minute series (1943). This area is about 4 km south of the town of Jarbidge on the floor of a narrow, steep-sided canyon.

**Types.** Holotype ♂: NEVADA: Elko Co.; Jarbidge Mountains, Jarbidge Canyon, Pine Creek to Gorge Gulch, 30 July 1981, *leg.* G. T. Austin. Allotype ♀: same data as holotype. Paratypes (all specimens examined from NEVADA: Elko County; Jarbidge Mountains are considered paratypes, *leg.* G. T. Austin unless specified otherwise, 22♂, 21♀): same data as holotype (11♂, 2♀), Bear Creek, 4.7 mi. S. Jarbidge, 7 Aug. 1980 (2♂), Charleston, 7 Aug. 1980 (2♂, 16♀), 76 Creek, 3.0 mi. N. Charleston, 7 Aug. 1980 (1♀), Jarbidge, 11 July 1971 (1♂, *leg.* P. Herlan), 1 Aug. 1963 (2♂, 1♀, *leg.* P. Herlan), Bear Creek Meadows, 29 July 1976 (1♂, *leg.* P. Herlan), Pine Creek, 10 July 1972 (2♂, *leg.* P. Herlan), Coon Creek, 12 Aug. 1970 (1♂, *leg.* P. Herlan), 3 mi. S. of North Fork, 26 July 1976 (1♀, *leg.* G. Harjes).

**Deposition of Type Material.** The holotype, allotype and 8 pairs of paratypes will be deposited in the type collection at the Nevada State Museum, Carson City, Nevada. A pair of paratypes will be deposited in the Allyn Museum of Entomology. The remaining paratypes will be retained by the author.

**Additional Specimens Examined** (all *leg.* G. T. Austin unless indicated otherwise). NEVADA: Elko Co.; Independence Mountains, Jack Creek Road, 1.7 mi. W. Jack Creek Campground, 27 July 1981 (6♂, 14♀), North Fork Road, 5.1 mi. W. Nevada 225, 27 July 1981 (3♂), 3.8 mi. E. North Fork Summit, 27 July 1981 (1♂), Jack Creek, 4.5 mi. E. Nevada 226, 4 July 1980 (1♂), Nevada 11A, 6.7 mi. E. Nevada 226, 28 July 1981 (2♂), Nevada 11A, 1.7 mi. E. Nevada 226, 23 June 1981 (1♀), Nevada 226 at Nevada 11A, 28 July 1981 (1♀), Nevada 11A, 3.2 mi. W. Maggie Summit, 28 July 1981 (2♀), Nevada 226 and Nevada 11A, Jack Creek to Maggie Summit, 10 July 1982 (2♂, *leg.* S. O. Mattoon), Nevada 11A, Bull Run Basin to Columbia Basin, 11 July 1982 (1♂, *leg.* S. O. Mattoon), Nevada 226, Taylor Canyon, 8 mi. NW Nevada 225, 10 July 1982 (2♂, *leg.* S. O. Mattoon), slopes and summit of Porter Peak, 11 July 1982 (1♂, *leg.* S. O. Mattoon), vicinity of Maggie Summit, 20 July 1973 (1♀, *leg.* S. O. Mattoon), Independence Valley, 10 mi. NE

Table 1. Characteristics of *Lycaena editha* and *xanthoides* populations.

Character	<i>nevadensis</i> <sup>1</sup>	<i>montana</i>	<i>editha</i> <sup>2</sup>	<i>editha</i> <sup>3</sup>	<i>xanthoides</i>
Primary length in mm (N, range)	♂♂ 15.9 (35,14.0-18.4)	15.3 (27,14-16.5) <sup>4</sup>	15.7 (41,14.7-17.1)	16.4 (16,15.0-17.9)	18.6 (15,16-20) <sup>5</sup>
	♀♀ 15.7 (39,14.4-16.8)	15.1 (22,14-16) <sup>4</sup>	15.6 (28,14.0-16.7)	16.3 (2,16.3,16.3)	18.7 (15,16.5-20.5) <sup>5</sup>
Spot in M <sub>2</sub> -M <sub>3</sub> , ventral secondaries (width in mm, N) ♀♀	♂♂ 1.11 (34)	1.37 (24) <sup>4</sup>	1.06 (41)	1.03 (16)	0.56 (11) <sup>5</sup>
	♀♀ 1.30 (41)	1.61 (17) <sup>4</sup>	1.25 (28)	1.00 ( 2)	0.65 (11) <sup>5</sup>
Dorsal ground color	Army Brown	Burnt Umber	Burnt Umber	Burnt Umber	Army Brown
Ventral secondaries ground color	♂♂ Whitish to whitish tan	pale tan	pale tan	pale tan	pale tan
	♀♀ pale tan	pale tan	tan	pale tan	pale tan
Ventral maculation primaries	small, some often absent	large, all usually present	large, all usually present	large, all usually present	large, all usually present
secondaries	large <sup>6</sup> , indistinct	very large, prominent	large, prominent	large, prominent	small, prominent
White submarginal band, ventral secondaries	wide, indistinct	wide, indistinct	wide, distinct	wide, distinct	narrow, indistinct
Dorsal secondaries, pale line distal to marginal black spots in ♀♀	usually narrowly present, orangish	indistinct, orangish	indistinct or absent, orangish	indistinct or absent, whitish or orangish	usually prominent, white

<sup>1</sup>all from Elko County, Nevada<sup>2</sup>all from Douglas County, Nevada<sup>3</sup>all from 10-16 mi. SW Mt. Shaasta, Siskiyou County, California<sup>4</sup>from Scott (1979)<sup>5</sup>from Scott (1979, San Diego County population)

Tuscarora, 10 July 1982 (1♂, 1♀, *leg.* S. O. Mattoon), Owyhee River Valley, Wild-horse Creek Campground, ca. 10 mi. S. Mountain City, 8 July 1978 (1♂). Humboldt Co.; Santa Rosa Mountains, Cabin Creek, 5.1 mi. S. Windy Gap, 13 Aug. 1981 (3♂), Sheldon Antelope Range, Dufurrena Ranch, 28 July 1980 (1♀).

**Geographical Range and Phenology.** To date, the new taxon is known only from north-central Elko County (Jarbidge and Independence mountains) and northern Humboldt County (Santa Rosa Mountains and Sheldon Antelope Range), Nevada. Colonies probably exist in, at least, adjacent southwestern Idaho and southeastern Oregon.

There is apparently one brood with adults present over a one and one-half month span from 23 June to 13 August.

**Etymology.** The subspecies is named after the state of Nevada, its only currently known range.

### Diagnosis and Discussion

The discovery of this pallid form of *editha* adds one more to the growing list of pale phenotypes known from the Great Basin. The first impression of a series of the new taxon is *editha* which has been exposed to light too long and are thus faded. The dorsal surface is considerably paler than nominate *editha* with a narrow terminal line. The ventrum is ghostly white compared with the richness of color in *editha*. The spots of the primaries of *nevadensis* are reduced in size and are often wanting. The maculation of the secondaries is indistinct, usually not much darker than the ground color and the spots are often very indistinctly edged with the black and white that is so prominent in *editha*. The submarginal white band, although broad, is nearly lost in the ground color, not distinct as in *editha*. The marginal spots of both wings are much less well defined than in *editha*. The characters which distinguish *nevadensis* from *editha* also distinguishes it from *montana*. In size, *nevadensis* is comparable to *editha*, thus larger than *montana*. The main distinguishing features of the *editha* subspecies as well as nominate *xanthoides* (Boisduval) are outlined in Table 1.

Recently, Scott (1979) suggested that *editha* was conspecific with *xanthoides* based on allopatry and two known areas with intermediate populations. I prefer to treat *editha* as a species distinct from *xanthoides* (Boisduval).

In Nevada, nominate *editha* is distributed mainly in the western portions in and near the Sierra Nevada (Carson City, Douglas, Storey and Washoe counties), in the Toiyabe Mountains (Lander County) and the Pine Forest Mountains (Humboldt County). The latter are dark and richly marked, unlike the *nevadensis* from the Santa Rosa Mountains to the east. The Oregon material that I have seen (Crook, Klamath and Lake counties) also appear as nominate *editha* as does certain California (Eldorado, Mono, Placer and Tehama counties) material. A series from near Scott's (1979) "intermediate" population in Siskiyou County, California (10-16 mi. SW Mt. Shasta, 26-27 June 1959, *leg.* O. E. Sette) is slightly larger than

Sierran nominate *editha* but is similar in color and pattern to the latter.

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